

Four degrees and beyond

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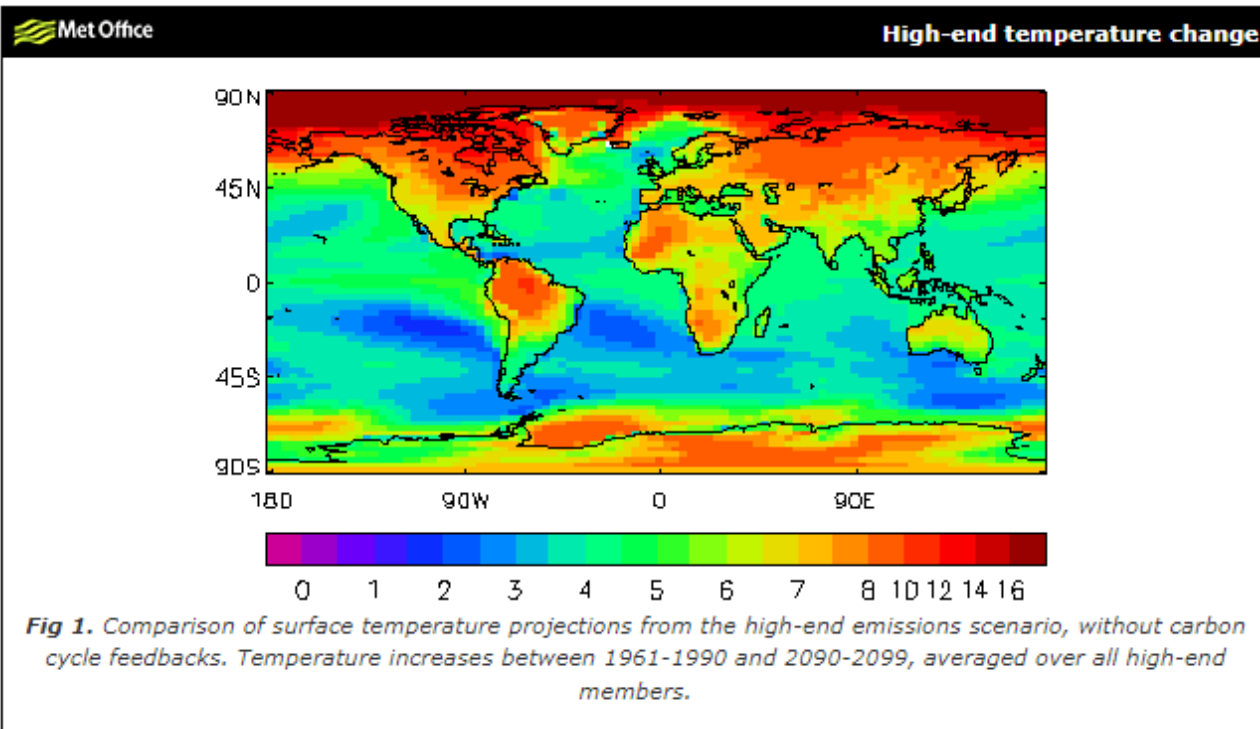


If greenhouse gas emissions continue to rise unchecked, it is likely that global warming will exceed four degrees by the end of the century, research by Met Office scientists has revealed.

Our scientists, working on behalf of Department of Energy and Climate Change (DECC), have found that if current high emissions continue there could be major implications for the world — with higher temperature rises than previously thought.

Dr Richard Betts, Head of Climate Impacts at the Met Office Hadley Centre, presented the new findings at a special conference this month. *4 degrees and beyond* at Oxford University, attended by 130 international scientists and policy specialists, is the first to consider the global consequences of climate change beyond 2 °C.

Dr Betts said: “Four degrees of warming, averaged over the globe, translates into even greater warming in many regions, along with major changes in rainfall. If greenhouse gas emissions are not cut soon, we could see major climate changes within our own lifetimes.”



In some areas warming could be significantly higher (10 degrees or more).

- The Arctic could warm by up to 15.2 °C for a high-emissions scenario, enhanced by melting of snow and ice causing more of the Sun’s radiation to be absorbed.
- For Africa, the western and southern regions are expected to experience both large warming (up to 10 °C) and drying.
- Some land areas could warm by seven degrees or more.
- Rainfall could decrease by 20% or more in some areas, although there is a spread in the magnitude of drying. All computer models indicate reductions in rainfall over western and southern Africa, Central America, the Mediterranean and parts of coastal Australia.
- In other areas, such as India, rainfall could increase by 20% or more. Higher rainfall increases the risk of river flooding.

Dr Betts added: “Together these impacts will have very large consequences for food security, water availability and health. However, it is possible to avoid these dangerous levels of temperature rise by cutting greenhouse gas emissions. If global emissions peak within the next decade and then decrease rapidly it may be possible to avoid at least half of the four degrees of warming.”

A DECC spokesman said: “This report illustrates why it is imperative for the world to reach an ambitious climate deal at Copenhagen which keeps the global temperature increase to below two degrees.”